



Accurate Dosing in Laundry

A closer look at hospitality and healthcare operations

Table of Contents

I.	THE IMPORTANCE OF CLEAN LINEN	
	<i>Assuring guest and patient satisfaction and safety</i>	
		<i>Page 3</i>
II.	DIRTY LAUNDRY	
	<i>Stains in hospitality environments</i>	
		<i>Page 3</i>
III.	BEYOND BEDDING	
	<i>Laundered essentials for healthcare</i>	
		<i>Page 5</i>
IV.	THE BENEFITS OF A LAUNDRY DISPENSER	
	<i>Simplifying and improving the laundry process</i>	
		<i>Page 6</i>
V.	FINDING THE RIGHT DISPENSER	
	<i>Key features for your unit</i>	
		<i>Page 8</i>
VI.	MAINTAINING HYGIENE EXPECTATIONS AND STANDARDS	
	<i>Solving the laundry equation</i>	
		<i>Page 8</i>

The Importance of Clean Linen

Many organizations rely on having a constant supply of clean linen, especially hotels and healthcare facilities. Today, the hospitality industry is faced with increasing competition as more travelers turn to short-term home rentals for stays that were once exclusively booked through hotels.¹ In fact, research released in 2018 found that in 10 U.S. cities with the largest Airbnb market share, hotels saw a 1.5 percent decline in revenue.

To secure new and repeat business and stay competitive, hotels must have every detail in order. According to research by hotel search site Trivago, more than 60 percent of travelers read online reviews before booking their hotel rooms, and 78 percent of guests expect an “above average” level of cleanliness.²

Furthermore, a study by consulting firm Metabolic found that quality linen can contribute anywhere from 5-20 percent of customer satisfaction ratings.³ Linen can also have a specific impact on a guest’s experience. With brand image and profitability on the line, hotels can’t afford to provide guests with unclean bedding and towels.

Just like linens have the ability to impact a hotel guest’s perception of a property, they also have an important role in healthcare facilities: keeping patients safe.⁴ From hospitals to ambulatory surgical centers to urgent care clinics to long-term care centers, there are numerous types of healthcare facilities that treat patients. Within these sites, items like bed sheets and pads, patient gowns and even privacy curtains must be properly laundered to ensure they remain clean and sanitary for the duration of a patient’s stay or for the next admitted patient.

When so much is riding on the cleanliness of linen, hotel and healthcare executives who oversee laundry operations should understand the laundry process in detail, including relevant standards, common stains, laundry facility best practices and even equipment recommendations around cleaning tools like chemical dispensers. With a sound laundry strategy, guests, patients and employees will always have clean and sanitary linen when they need it most.

Dirty Laundry

The last thing a hotel guest wants is to be greeted with a stained duvet or dirty bathroom towels. While clean linen is a must, it’s a challenge that hotels face on a daily basis. Many

¹ <https://www.forbes.com/sites/hbsworkingknowledge/2018/02/27/the-airbnb-effect-cheaper-rooms-for-travelers-less-revenue-for-hotels/#1da7f266d672>

² <https://www.bighospitality.co.uk/Article/2016/03/16/Clean-linen-has-significant-impact-on-guest-satisfaction-finds-survey>

³ <https://www.metabolic.nl/in-the-news/improving-the-environmental-performance-of-hotel-linen/>

⁴ <https://www.wabe.org/clean-linens-are-safe-linens-and-hospitals-dont-take-them-for-granted/>

properties use white linen, not only because it projects an image of luxury but because all white items can be laundered together and even bleached if necessary.

There are numerous types of stains that can occur in the hospitality sector, including:

- **Daily use stains:** Some stains are extremely difficult to prevent, including cosmetic stains on face towels and pillow cases as well as stains from grease, oil, sauces and condiments on napkins. Even bodily fluids like saliva, sweat and blood present challenges. Many hotels also frequently deal with suntan and bronzing lotion rubbing off on pool towels. Because they're inevitable, it's important that a hotel's laundry program is equipped to regularly remove these stains so that linens emerge like new.
- **Accidental stains:** Spills happen, whether onto a tablecloth in the hotel restaurant or onto a duvet while enjoying room service. Often, cloth napkins and even towels may be used to clean up things like coffee, wine, soft drinks and food. These accidental stains still need a very purposeful strategy when it comes to laundering. Otherwise, linen may need to be replaced more frequently than a property would like, which drives up costs. The Association for Linen Management estimates that on average, linen and linen replacement costs can amount to about 30 percent of an on-premise laundry's (OPL's) budget.⁵

Table 3A-6: "Best Practice" Recommended Operating Costs for OPL and Commercial Laundry Operations, 2018

Cost	Range	Cost per lb
Production (including labor)	28 - 33%	10 - 15 cents
Linen and linen replacement	24-36%	9 - 12 cents
Water and energy	7%	3 - 6 cents
Chemicals	5%	1- 2 cents

SOURCE: Association for Linen Management, 2018.

- **Guest misuse stains:** While most guest stains are unknowingly or accidentally transferred to linens, others are more purposeful. For example, some guests use a bathroom towel to apply dark brown or black shoe polish if a shoe polishing cloth is not easily accessible.
- **Staff misuse linen:** Guests aren't the only ones who leave dirty linen in their wake. Staff members may contribute to stains if they don't have thorough training or if the laundry process is not managed properly. For instance, soils may emerge during the linen transport process, due to linens falling from overloaded trolleys onto dirty floors. Linen can also get caught in feeder or folder rolls, rusty belts or in the automatic folder. An

⁵ <https://www.almnet.org/>

extremely high dosage of a special detergent is required to remove these unpleasant black marks.

- **Color bleeding and dye transfer:** Color bleeding happens quite frequently with table linen, such as colored cloth napkins. It is also accelerated if linen is washed at high temperatures and/or at a high pH.

A well-executed laundry program will not only reduce the opportunity for stains and remove those that do occur, it will help bring guests peace of mind. According to a 2016 survey conducted in the UK, more than 80 percent of travelers are concerned by how often hotel bedding is washed when booking a stay.⁶ The survey also revealed that 90 percent of guests expect hotels to wash duvets and pillows at least once a month, with more than half (51 percent) of these guests expecting these items to be laundered weekly or even daily.

Beyond Bedding

Healthcare Associated Infections (HAIs) are infections that patients contract while receiving medical treatment, and affect hundreds of millions of people globally. According to the World Health Organization, of every 100 hospitalized patients at any given time, 7 in developed and 10 in developing countries will acquire at least one HAI. Because of the extended stays and treatment that HAIs require, they create a significant burden on patients and the healthcare system. Annual direct costs related to HAIs and the 16 million extra days of hospital stay that they cause are estimated at \$6.5 billion in the U.S. and €7 billion in Europe.⁷

Unfortunately, HAIs can be caused by numerous factors, including poor environmental and personal hygiene, overcrowding, understaffing and lack of training. Even different types of linen used by patients and employees can carry microscopic risks that can result in HAIs. A recent study published in the *Journal of Infection Control & Hospital Epidemiology* found that inadequate laundering processes may only reduce *C. difficile* spore counts by as little as 40 percent, below the microbiological standards for containing disease-causing bacteria.⁸

It's imperative that managers are aware of the different types of linen used within a healthcare facility and how to meet and exceed laundry standards. These items include:

- **Bed linen and pads:** Most patients in healthcare facilities spend most of their time in a bed. Sheets, blankets, bed covers and mattress pads must be regularly washed to ensure they won't re-infect a patient or infect the next patient who will use the bed.

⁶ <https://www.boutiquehotelnews.com/home/news/2016/2/11/survey-reveals-guest-concerns-over-cleanliness-of-hotel-bedding/>

⁷ https://www.who.int/gpsc/country_work/gpsc_ccisc_fact_sheet_en.pdf

⁸ <https://www.modernhealthcare.com/article/20181016/NEWS/181019914>

- **Gowns:** Patient gowns can also spread germs to other people or surfaces if they are not properly laundered. Whether a facility relies on an OPL or an outsourced provider, it's important to ensure that there are separate areas and physical barriers in storage areas and laundry facilities for clean and soiled linens to reduce the risk of cross contamination.⁹ These gowns should also never be washed with non-medical garments.
- **Scrubs:** According to The Joint Commission, which accredits and certifies nearly 21,000 health care organizations and programs in the U.S., when surgical scrubs and attire are visibly contaminated, the employer is responsible for laundering per Occupational Safety and Health Administration (OSHA) standards.¹⁰ If the clothing is not visibly contaminated, it may be laundered at home but the Association of periOperative Registered Nurses (AORN) strongly recommends that a healthcare-accredited laundry facility manages the cleaning.¹¹
- **Privacy curtains:** Privacy curtains are the latest item to cause a stir around cleanliness, with new research highlighting just how dirty these room dividers can be. Privacy curtains can become breeding grounds for resistant bacteria, posing a threat to patient safety, say Shek, et al. (2018) who conducted a pilot study to track the contamination rate of 10 freshly laundered privacy curtains in a Canadian hospital. While the curtains had minimal contamination when they were hung, those located in patient rooms became increasingly contaminated over time. By day 14, 87.5 percent of the curtains tested positive for methicillin-resistant Staphylococcus aureus (MRSA), a dangerous form of bacteria resistant to many antibiotics.¹²

For healthcare facilities that outsource the laundering of these essential items, accreditation is an important consideration. No state requires hospitals to use accredited laundries. However, it's important to note that laundries that have been accredited by the Healthcare Laundry Accreditation Council (HLAC) take extra steps to meet comprehensive standards for safe linen handling. There are currently more than 160 accredited laundry facilities in the U.S. and Canada according to HLAC's public records.¹³ With patient health and safety at stake, taking these extra precautions is advised.

The Benefits of a Laundry Dispenser

Some hotels operate an OPL to quickly launder items accumulated from guest rooms as well as on-site restaurants, bars, spas, pools and fitness centers. With the proper equipment, these operations can manage up to 100 chemical formulations to cover various load sizes and linen

⁹ <https://bandctech.com/commercial-laundry-blog/2015/07/the-easy-solution-for-hospital-laundry/>

¹⁰ https://www.jointcommission.org/standards_information/jcfaqdetails.aspx?StandardsFAQId=1294

¹¹ <https://www.infectioncontroltoday.com/laundry/updated-surgical-attire-recommended-practice-takes-stronger-stance-nixes-home-laundering>

¹² <https://www.infectioncontroltoday.com/transmission-prevention/hospital-privacy-curtains-and-bed-sheets-soft-surface-contamination-and>

¹³ <https://www.hlacnet.org/>

types. Without a dispenser in place, employees must manually measure chemicals and dose them at precisely the right time. This creates risks around safety and accuracy.

In addition to in-house laundry operations, dispensers are useful for industrial laundry facilities or linen supply companies that service clients like hotels and healthcare facilities. Today, most commercial laundry machines are built with connections for liquid detergents to allow laundry managers to use external chemical dispensing systems. In addition to detergents, dispensers can deliver other types of chemical, including de-staining products, alkali boosters, emulsifiers, sanitizers and fabric conditioners.

Laundry dispensers offer numerous benefits, including:

- **Accurate measurements every time:** The laundry process requires the right balance of time, wash agitation, temperature and chemical. When these factors are at the proper levels, stains are more likely to be removed, and linen is sanitized properly. While it's important to keep linen visibly clean, it's also essential to remove microscopic bacteria that can't be seen by the naked eye but may be present on items like hotel sheets and hospital gowns.
- **Sustainability and cost savings:** When dispensers dose the right amount of chemical, this helps ensure that linen emerges clean on the first wash and is not damaged. If linen is not clean, it must be rewashed. Reducing rewash rates helps laundries save water, energy, chemical and time, while prolonging linen life. Not only do these savings contribute positively to the environment, they also support a laundry's bottom line. For outsourced laundry programs, a portion of these savings may be passed on to the customer.
- **Brand image assurance:** For a hotel, nothing is more important than ensuring guest satisfaction, as it has an impact on whether that guest will return and recommend the property to others.¹⁴ For a healthcare facility, patient health, safety and satisfaction is crucial. In fact, scores from the national Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey can help healthcare facilities secure reimbursements.¹⁵ Cleanliness, including clean linen, is an underlying component of guest and patient satisfaction. A reliable dispenser helps businesses operate an effective laundry program and can indirectly help secure rave reviews and higher HCAHPS scores.
- **Remote access and control for critical laundry data in real-time:** Today, managers have the option to install smart dispensers that provide important data about the laundry process. For example, these dispensers can reveal information about the number of alarms that occurred during a shift and chemical usage. Dispensers can also keep detailed records on each load, outlining the exact amount and time of each dose. This is

¹⁴ <https://www.idpower.com/business/press-releases/2018-north-america-hotel-guest-satisfaction-index-nagsi-study>

¹⁵ <https://www.healthleadersmedia.com/finance/better-hcahps-scores-protect-revenue>

helpful for compliance and provides proof that the correct chemicals were delivered to achieve clean and sanitary results. Finally, dispensers can be used to run the laundry more effectively by providing insight on production, turn-times, and efficiencies. These measures help reduce costs and downtime so the laundry can operate as smoothly as possible.

Finding the Right Dispenser

To reap the benefits that a dispenser provides, those with oversight of the laundry program should ensure their facility or laundry provider is using a dispenser with several key features.

First and foremost, the dispenser should be constructed with reliable and accurate pumps to ensure that proper dosing occurs each time chemical is needed. If dosing to multiple washers or Continuous Batch Washers, the dispenser should have separate dosing channel configurations, including a pump, flow meter and distribution valves. Hotels and healthcare facilities launder a high volume of linen and have numerous washers in place to meet the demands of the facility. Multiple channel configurations will enable the system to efficiently dose all products without long queues and prevent expensive delays that can arise if the system is undersized.

Today there are some dispensers on the market that do not utilize peristaltic pumps or squeeze tubes. Such dispensers offer immense savings in spare parts, maintenance and service labor costs.

The dispenser should also offer wireless reporting capabilities. Because it's not feasible for managers or chemical providers to be onsite monitoring laundry operations at all times, a smart dispensing system can be a huge time saver. System software and mobile connectivity provides laundry and chemical personnel with a closer look at key performance indicators, like formulas, volume of washes and average production rate. Access to this data allows managers to proactively act on issues ranging from inadequate water pressure to staff training opportunities. Remote access capabilities allow certain adjustments to be made even while offsite. This reduces errors that can impact costs and productivity.

An especially essential consideration for on-premise laundries is that the dispenser has a compact design and easy installation and maintenance to reduce the time needed to set it up and keep it working for years to come.

Maintaining Hygiene Expectations and Standards

At a hotel, clean linen has the power to positively contribute to a traveler's experience. Meanwhile, items like bed covers, patient gowns and privacy curtains must be cleaned on a regular basis in healthcare facilities to protect patients.

Laundry and facility managers at hotels and healthcare facilities should understand the numerous benefits that chemical dispensers provide, as well as key features to look for during

the purchase process. Once a dispenser is installed, employees should be trained so that they understand its function and how to operate and work alongside the unit.

Managers should also create a maintenance schedule to ensure the system continues to work at peak performance. Filters and strainers should be regularly cleaned to prevent water line particles from entering the valve. Managers should also investigate systems that do not rely on squeeze tubes to deliver product. If peristaltic tubes are being used, tubing should be replaced as it wears down, and dosing parameters should be checked and recalibrated as needed.

Having the right chemical dispenser in place is an important part of the laundry equation and a key part of maintaining guest satisfaction and patient health. Facilities that prioritize every element of their laundry program will not only ensure they have clean laundered items, but improve productivity and reduce chemical costs and wasted energy and water. It's a true win-win for both the end user and the organization.

For more information about dispensing equipment for your laundry program, contact John Goetz, global product manager at Hydro Systems at jgoetz@hydrosystemsco.com or visit hydrosystemsco.com.